REMARKS

Please amend and add claims as set forth above. Applicants have amended claims 25, 26 and 28. Claims 1-24 and 29 have been cancelled without prejudice or disclaimer. Applicants have added new claims 35-37, support for which can be found throughout the specification. See, for example, pages 4-5. The office action is discussed below.

Definiteness

For definiteness, a claim need only reasonably apprise those skilled in the art of the utilization and scope of the invention. *Hybritech, Inc. v. Monoclonal Antibodies,* 231 USPQ 81, 94-95 (1986). Words are to be given their plain meaning as understood by the person of ordinary skill in the art, particularly given the limitations of the English language. *See* MPEP §§ 707.07(g); 2111.01 (Rev. 6, February 2007). Claims are to be given their broadest reasonable interpretation consistent with applicants' specification. *See* MPEP § 2111 (Rev. 6, February 2007). In sum, in order to reject the claims on definiteness grounds, it is incumbent on the examiner to show how and why the skilled person having applicants' specification would not be apprised of the invention by the language-at-issue.

At section 8A, the examiner considered the phrasing relating to W66 to be indefinite. Applicants have amended the claims for clarity. Support for this amendment can be found at the paragraph bridging pages 19 to 20. At section 8B, the examiner believed that the recitations concerning the epitope were ambiguous. Applicants point out that the epitope contains the G strand and either the A or F strand, and can be optionally supplemented by W66 on the E strand. See, e.g., specification at page 2, lines 4-8 and 28-30; page 3, lines 8-9; and original claims 1 and 3 .

Applicants submit that the claims are definite as per the legal standards explained above, and therefore applicants respectfully request withdrawal of the rejections.

Enablement

At sections 9-10, the examiner rejected the claims on enablement grounds. Although the rejection was made, the examiner does admit that peptides consisting of SEQ ID NOs: 9-11 as antagonists of ICAM-4 are enabled.

Nevertheless, the examiner asserts that the application does not enable for any antagonist of any ligand of the claimed epitope. The examiner also asserts that the application does not provide any guidance on how to use the antagonist. Applicants respectfully traverse this rejection.

Applicants submit that the Examiner has not established a *prima facie* case of non-enablement. Accordingly, Applicants submit that their application is in full compliance with 35 USC § 112.

Section 112 mandates that patent applications contain the "manner and process of making and using" the invention. The courts have considered applications in compliance with section 112 where the person of skill in the art can practice the invention without undue experimentation. *See Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 231 USPQ 81, 94 (Fed. Cir. 1986). The test is not whether experimentation is necessary, but whether any experimentation would be undue in view of what type and amount of experimentation is usual in that particular field. *See* MPEP §§ 2164.05 (a-b), 2164.06 (Rev. 6, February 2007). Routine design choices cannot be equated with non-enablement.

Thus, the burden to establish an enablement rejection rests with the Examiner. *See* MPEP § 2164.04 (Rev. 6, February 2007). As explained by the Federal Circuit in considering the intertwined issues of enablement and utility:

> [I]t follows that the PTO has the initial burden of challenging a presumptively correct assertion of utility in the disclosure. Only after the PTO provides evidence showing that one of ordinary skill in the art would reasonably doubt the asserted utility does the burden shift to the applicant to provide rebuttal evidence sufficient to convince such a person of the inventor's asserted utility. * * * Taking these facts – the nature of the invention and the PTO's proffered evidence – into consideration we conclude that one skilled in the art would be without basis to reasonably doubt applicants' asserted utility on its face. The PTO has not satisfied its initial burden. ***Accordingly, applicants should not be required to substantiate their presumptively correct disclosure to avoid a rejection under the first paragraph of § 112.***

In re Brana, 34 USPQ2d 1436, 1441 (Fed. Cir. 1995) (emphasis added), *citing In re Marzocchi*, 169 USPQ 367, 369-70 (CCPA 1971).

Applicants submit that the Examiner has not met this burden. First of all, the examiner has not addressed the level of skill in the art nor differentiated undue experimentation from routine experimentation in this particular field. This is sufficient grounds to compel withdrawal of the rejection. *Ex parte Harley*, Appeal No. 2001-1263 at page 10 (copy enclosed).

In this case, the specification provides various methods of making and characterizing the disclosed and claimed antagonists. The specification at pages 16-23 describes procedures for many embodiments that fall within the claims. Pages 24-27 provide sequence information. All of this disclosure, combined with the level of skill in the art and the expected level of experimentation in the field militate against any rejection based upon enablement. Applicants further note that the term "functional homologue" has

been removed from the claims. Thus, absent factual evidence combined with requisite findings and explanation from the examiner, the rejection should be withdrawn.

Written Description

The USPTO final guidelines for written description are published at MPEP § 2163. The written description guidelines first instruct examiners to determine what the claim as a whole covers and then review the entire specification to determine whether all subject matter that is essential to the invention is actually recited in the claims. See written description guidelines at II(A)(1), (2). Next, the examiners are instructed to determine whether the applicant was in possession of all that is claimed. See the written description guidelines at II(A)(3). According to the guidelines, possession of a claimed invention can be shown by disclosure of structural characteristics, functional characteristics that correlate with structure or combinations thereof. See the written description guidelines at II(A)(3)(a). The written description of the representative species of the genus can be shown by disclosure of structural characteristics, functional characteristics that correlate with structure or combinations thereof. Applicants submit that the examiner has not satisfied these guidelines in making the rejection, which alone is grounds for withdrawal of the rejection.

According to the examiner, the applicant is in possession of a peptide consisting of SEQ ID NOs: 9-11 as antagonists of ICAM-4, but is not in possession of any antagonist of any ligand for the claimed epitope or claimed footprint domain for binding to any integrin or any antagonist of a functional homologue or the claimed epitope or an antagonist of any functional homologue of the claimed footprint domain. Applicants respectfully traverse the rejection.

As pointed out above, the epitope contains the G strand and either the A or F strand, and can be optionally supplemented by W66 on the E strand. This is set forth in the specification at page 2, lines 4-8 and 28-30; page 3, lines 8-9; and original claims 1 and 3, for example. Furthermore, the specification contains a more than representative number of species sequences that are set forth at pages 9-27.

As explained in the MPEP § 2163:

> For some biomolecules, examples of identifying characteristics include a sequence, structure, binding affinity, binding specificity, molecular weight, and length. Although structural formulas provide a convenient method of demonstrating possession of specific molecules, other identifying characteristics or combinations of characteristics may demonstrate the requisite possession. As explained by the Federal Circuit, "(1) examples are not necessary to support the adequacy of a written description; (2) the written description standard may be met . even where actual reduction to practice of an invention is absent; and (3) there is no per se rule that an adequate written description of an invention that involves a biological macromolecule must contain a recitation of known structure." *Falkner v. Inglis*, 448 F.3d 1357, 1366, 79 USPQ2d 1001, 1007 (Fed. Cir. 2006). See also *Capon v. Eshhar*, 418 F.3d at 1358, 76 USPQ2d at 1084 ("The Board erred in holding that the specifications do not meet the written description requirement because they do not reiterate the structure or formula or chemical name for the nucleotide sequences of the claimed chimeric genes" where the genes were novel combinations of known DNA segments.). For example, disclosure of an antigen fully characterized by its structure, formula, chemical name, physical properties, or deposit in a public depository provides an adequate written description of an antibody claimed by its binding affinity to that antigen. *Noelle v. Lederman*, 355 F.3d 1343, 1349, 69 USPQ2d 1508, 1514 (Fed. Cir. 2004) (holding there is a lack of written descriptive support for an antibody defined by its binding affinity to an antigen that itself was not adequately described). Additionally, unique cleavage by particular enzymes, isoelectric points of fragments, detailed restriction enzyme maps, a comparison of enzymatic activities, or antibody cross-reactivity may be sufficient to show possession of the claimed invention to one of skill in the art. See *Lockwood*, 107 F.3d at 1572, 41 USPQ2d at 1966 ("written description" requirement may be satisfied by using "such descriptive means as words, structures, figures, diagrams, formulas, etc., that fully set forth the claimed invention"). A definition by function alone "does not suffice" to sufficiently describe a coding sequence "because it is only an indication of what the gene does, rather than what it is." *Eli Lilly*, 119 F.3 at 1568, 43 USPQ2d at 1406. See also *Fiers*, 984 F.2d at 1169-71, 25 USPQ2d at 1605-

06 (discussing *Amgen Inc. v. Chugai Pharmaceutical Co.*, 927 F.2d 1200, 18 USPQ2d 1016 (Fed. Cir. 1991)).****

In their specification, applicants have provided both the generalizing text that describes the claimed invention and specific sequences exemplifying aspects of the invention. Accordingly, applicants have described the invention in a manner that is fully compliant with the written description requirement, and therefore applicants respectfully request withdrawal on the rejection.

Prior Art

On pages 7-8, the examiner rejected the claims on anticipation grounds. Applicants note that in order to reject a claim under 35 USC § 102, the examiner must demonstrate that each and every claim term is contained in a single prior art reference. *See Scripps Clinic & Research Foundation v. Genentech, Inc.*, 18 USPQ2d 1001, 1010 (Fed. Cir. 1991); *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 231 USPQ 81, 90 (Fed. Cir. 1986); *see also* MPEP § 2131 (Rev. 6, Sept. 2007). Claim terms are to be given their plain meaning as understood by the person of ordinary skill in the art, particularly given the limitations of the English language. *See* MPEP §§ 707.07(g); 2111.01 (Rev. 6, Sept. 2007). Claims are to be given their broadest reasonable interpretation consistent with applicants' specification. *See In re Zletz*, 13 USPQ2d 1320, 1322 (Fed Cir. 1989) (holding that claims must be interpreted as broadly as their terms reasonably allow as defined or used by applicants); MPEP § 2111(Rev. 6, Sept. 2007).

Not only must the claim terms, as reasonably interpreted, be present, an allegedly anticipatory reference must enable the person of ordinary skill to practice the invention as claimed. Otherwise, the invention cannot be said to have been already within the public's

possession, which is required for anticipation. *See Akzo, N.V. v. U.S.I.T.C.*, 1 USPQ2d 1241, 1245 (Fed. Cir. 1986); *In re Brown*, 141 USPQ 245, 249 (CCPA 1964). Applicants review below the references with these concepts in mind.

On pages 7-8 of the Office Action, the examiner has rejected claims 25-27 under 35 U.S.C. 102, allegedly as being anticipated by Hermand *et al.* Applicants respectfully traverse this rejection.

Hermand et al. discloses in Fig. 1 what amounts to a nearly complete ICAM-4 sequence (from amino acid residues 20-202). Although the sequence includes the FWV motif, the whole molecule that is represented by the sequence would not act as an antagonist as claimed. Indeed, the examiner has recognized that a larger polypeptide comprising the FWV motif may render the motif inaccessible for binding to ICAM-4. See office action at page 5, lines 10-15. Accordingly, a skilled person would recognize that this molecule does not act as an antagonist.

The examiner also considers that the monoclonal antibodies disclosed by Hermand et al. bind to domain 1 of ICAM-4 and therefore anticipate claims 25-27. There is no evidence in Hermand et al. that the monoclonal antibodies bind the specific epitopes defined, and thus this rejection is unsubstantiated.

On page 8 of the Office Action, the examiner has rejected claims 25-28 under 35 U.S.C. 102, allegedly as being anticipated by Bailly *et al.* as evidenced by the Provisional Application No. 60/423,391 at page 1. Bailey discloses a (partially not determined) N-terminal sequence in Fig. 1A that includes the FWV motif and which therefore, according to the examiner, anticipates claims 25-28. However, the N-terminal peptide sequence

provided in Fig. 1A was derived from N-terminal sequencing of ICAM-4 and does not represent a distinct molecule, but rather a partial amino acid sequence characterization of the entire ICAM-4 molecule. A sequence, in the absence of other teachings, is not a molecule. Bailly was never in possession of a molecule as recited in the claims, and therefore could never disclose nor enable such a molecule.

Given the above distinctions, applicants submit that Hermand and Bailly do not meet the limitations of the claims, and does not enable the practice of the claimed invention. Accordingly, these references do not place the claimed invention in the possession of the public, and thus the rejection should be withdrawn.

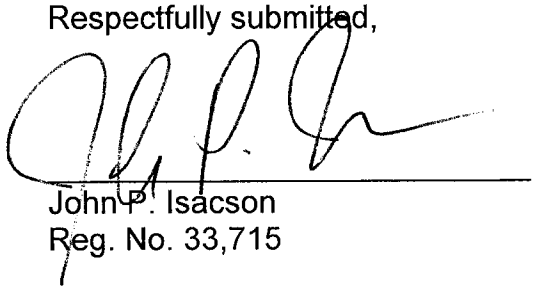
Withdrawn claims

Applicants note that claims 30-34 remains withdrawn. Applicants respectfully request examination of these claims since each ultimately depends from claim 25. Examiner of these claims does not seem to present an undue burden on the examiner.

REQUEST

Applicants submit that the pending claims are in condition for allowance, and respectfully request favorable consideration to that effect. The Examiner is invited to contact the undersigned at (202) 416-6800 should there be any questions.

Respectfully submitted,



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Date

John P. Isacson
Reg. No. 33,715

PROSKAUER ROSE LLP
1001 Pennsylvania Avenue, NW
Suite 400 South
Washington, DC 20004
Phone: 202-416-6800
Fax: 202-416-6899
Customer No. 61263